UPDATE OF GROWING AREA CLASSIFICATIONS

The official list of all New Hampshire shellfish growing areas is presented in Appendix 1. Fecal coliform data used to calculate the NSSP statistics presented below are in Appendix 2. The reader should note that for most sites, only the most recent 30 samples in Appendix 2 were used for calculation of statistics. Furthermore, Appendix 2 also summarizes the rainfall and seasonal criteria applied to the data, which vary for different growing areas, for statistical calculations.

Great Bay

At the start of 2005, the Great Bay growing area included 2,850 acres of Conditionally Approved waters, 182 acres of Restricted waters, and 1,184 acres of Prohibited/Safety Zone waters (Figure 9). The waters of the Squamscott and Lamprey rivers are included in the safety zone

NSSP statistics for Great Bay sites are presented in Table 3. Water quality data for sites in the Conditionally Approved area generally show low fecal coliform levels and indicate water quality that is consistent with the Conditionally Approved classification, including a rainfall closure condition of 1.50 inches. A new sanitary survey was completed for the growing area in December 2004, and called for the creation of several new sites. Restricted waters near the Winnicut River, Pickering Brook, Fabyan Point, and Crommett Creek led to the establishment of sites GB82/GB82A, GB83/GB83A, GB84, and GB7C, respectively. Site GB81 was created in 2004 following the completion of dye/dilution studies for the WWTFs in Exeter, Newfields, and Newmarket. These studies suggested that the Prohibited/Safety Zone currently located at GB4A could be moved westward. Data from Site GB81 will be used to determine if existing water quality conditions justify such an adjustment. No adjustment will be made until a total of 30 samples have been collected in accordance with the systematic random sampling strategy.

Table 3: NSSP Statistics for Stations in Great Bay
(Refer to Figure 1 for sampling site locations)

	GB81	GB4A	GB5	GB16	GB82	GB82A	GB83	GB83A	GB84	GB7C
Count	12	30	30	30	6	6	6	6	6	6
Geomean	9.3	7.8	4.7	4.9	4.9	6.3	4.6	3.6	3.1	4.4
Est. 90th	60.4	41.6	17.2	20.9	13.3	27.2	19.2	23.2	13.7	21.4
Class.	N	CA	CA	CA	N	N	N	N	N	N

N = New, CA = Conditionally Approved

As noted earlier in this report, sampling at GB82A will be discontinued in 2006 because water depths are frequently too shallow for boat access.

Little Bay

The Little Bay growing area (Figure 10) was revised in July 2005. The reclassification involved the creation of a restricted area at Branson Creek near the Adams Point boat launch, and the

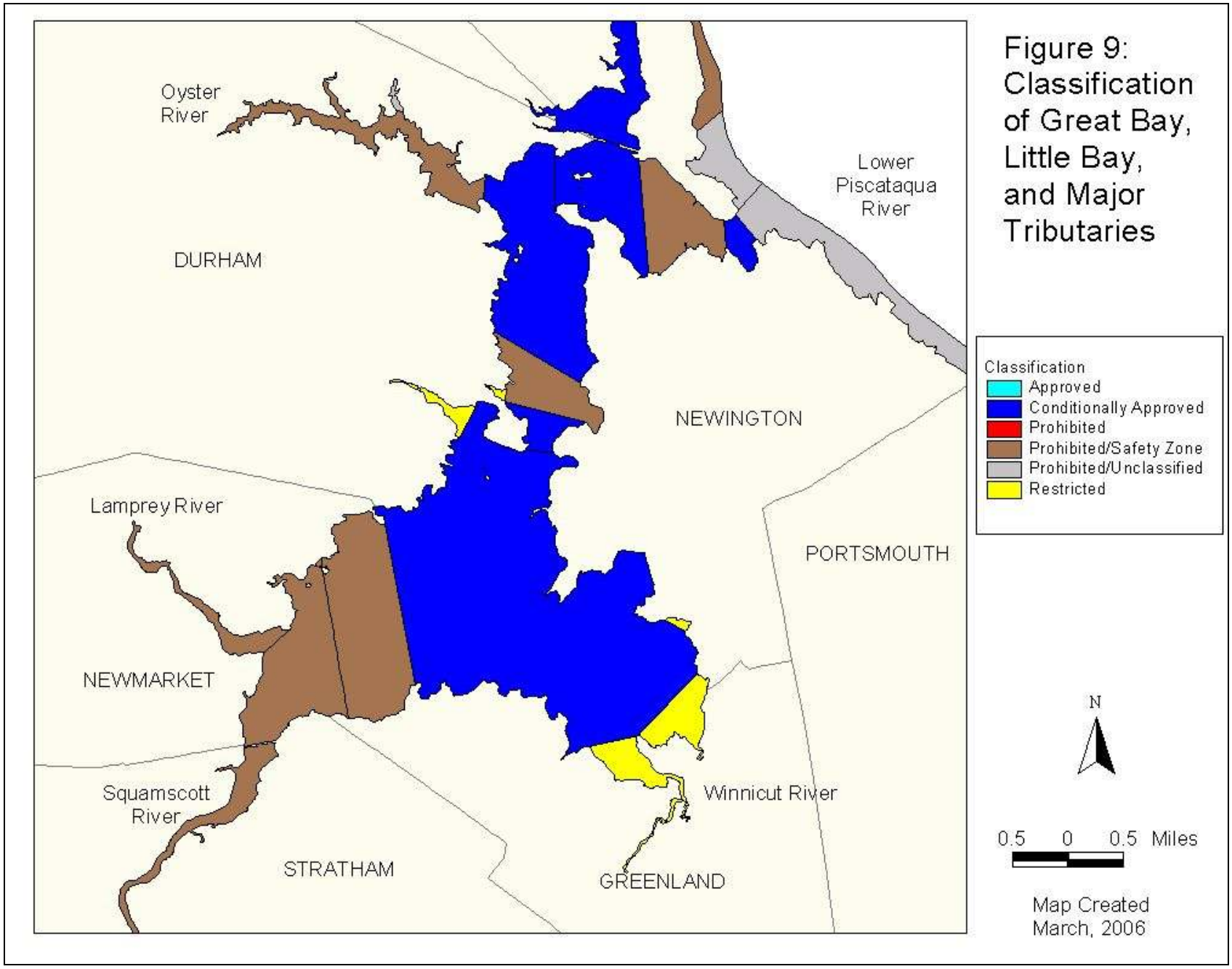


Figure 9: Classification of Great Bay, Little Bay, and Major Tributaries
Oyster River
Lower Piscataqua River
DURHAM
NEWINGTON
Lamprey River
PORTSMOUTH
NEWMARKET
Squamscott River
Winnicut River
STRATHAM
GREENLAND
Classification
Approved
Conditionally Approved
Prohibited
Prohibited/Safety Zone
Prohibited/Unclassified
Restricted
N
0.5 0 0.5 Miles
Map Created March, 2006

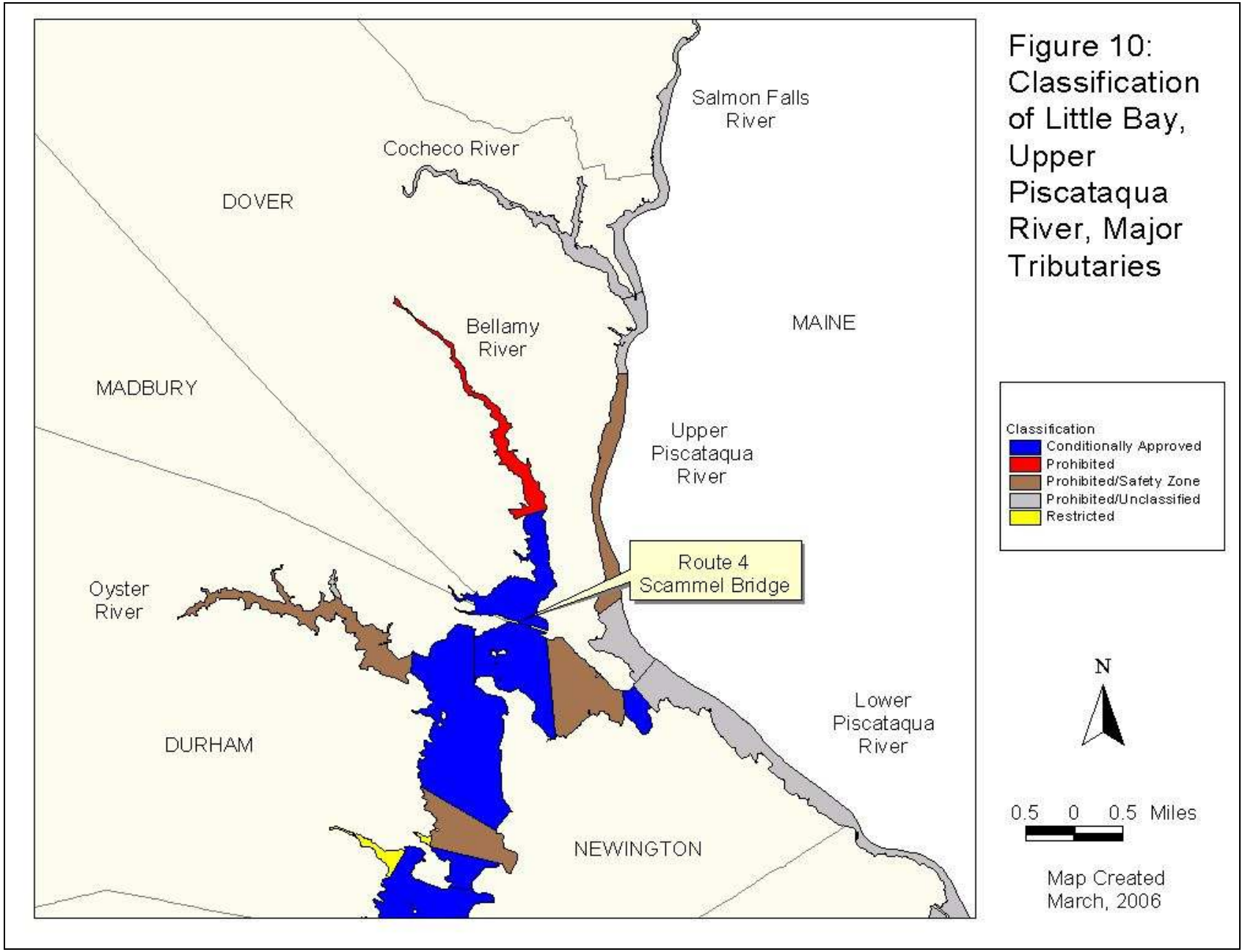


Figure 10: Classification of Little Bay, Upper Piscataqua River, Major Tributaries

creation of two Prohibited/Safety Zones around significant boating areas, sized for potential sewage contamination when the areas were at full occupancy. The adjacent growing waters had previously been open/closed on a seasonal basis, but this approach led to confusion among harvesters because the actual dates of the seasonal closures and reopenings would vary each year, depending on when boats were put in and hauled out for the season. The new approach closes a larger area on a permanent basis, but is a preferred approach because it affects an area with low shellfish abundance and actually results in more harvesting opportunities on an acre-day basis. The revised classification includes 1,333 acres of Conditionally Approved waters, six acres of Restricted waters, and 521 acres of Prohibited/Safety Zone.

NSSP statistics for Little Bay sites are presented in Table 4. Water quality data for sites in the Conditionally Approved area generally show low fecal coliform levels and indicate water quality that is consistent with the Conditionally Approved classification, including a rainfall closure condition of 1.50 inches. Sampling at GB6 was discontinued in 2005, so that site no longer appears in the table. A new sanitary survey was completed for the growing area in July 2005, and called for adjustment of sampling sites. New sites are needed on the boundaries of the Prohibited/Safety Zone areas: GB25A and GB25B in Lower Little Bay, and GB6A and GB6B in Upper Little Bay. Given the relocation of classification boundaries and new sites, historical sites GB25, GB27, and GB28 are no longer needed and will be discontinued in 2006.

Table 4: NSSP Statistics for Stations in Little Bay
(Refer to Figure 1 for sampling site locations)

	GB17	GB19	GB25	GB27	GB28	GB50	GB7A
Count	30	30	30	30	30	30	30
Geomean	5.5	5.9	7.5	6.8	4.6	5.7	4.4
Est. 90th	22.6	26.7	31.8	37.5	15.4	22.2	21.4
Class.	A	A	A	A	A	A	A

A = Approved

Piscataqua River

The Upper Piscataqua River growing area stretches from the mouths of the Cocheco and Salmon Falls rivers to Dover Point. Dye studies for the Dover wastewater treatment facility were completed in 2004. The December 2005 report describing these studies recommends boundaries for a Prohibited/Safety Zone area around the outfall (208 acres, Figure 10). Adjacent areas include 214 acres of waters that will be classified via a 2006 sanitary survey report. The lower Piscataqua River and Portsmouth Harbor (1,174 acres; Figure 11) remain unclassified, a situation that will continue until a decision on possible changes to the Portsmouth WWTF outfall is finalized as part of the NPDES permit renewal process.

NSSP statistics for Piscataqua River sites are presented in Table 5. Water quality data generally show high fecal coliform levels in the upper reaches of the river, with decreasing geometric means and measures of variability in the downstream direction. In 2004, Site GB24 was deemed to be of marginal value to the program. The delineation of the Dover WWTF Prohibited

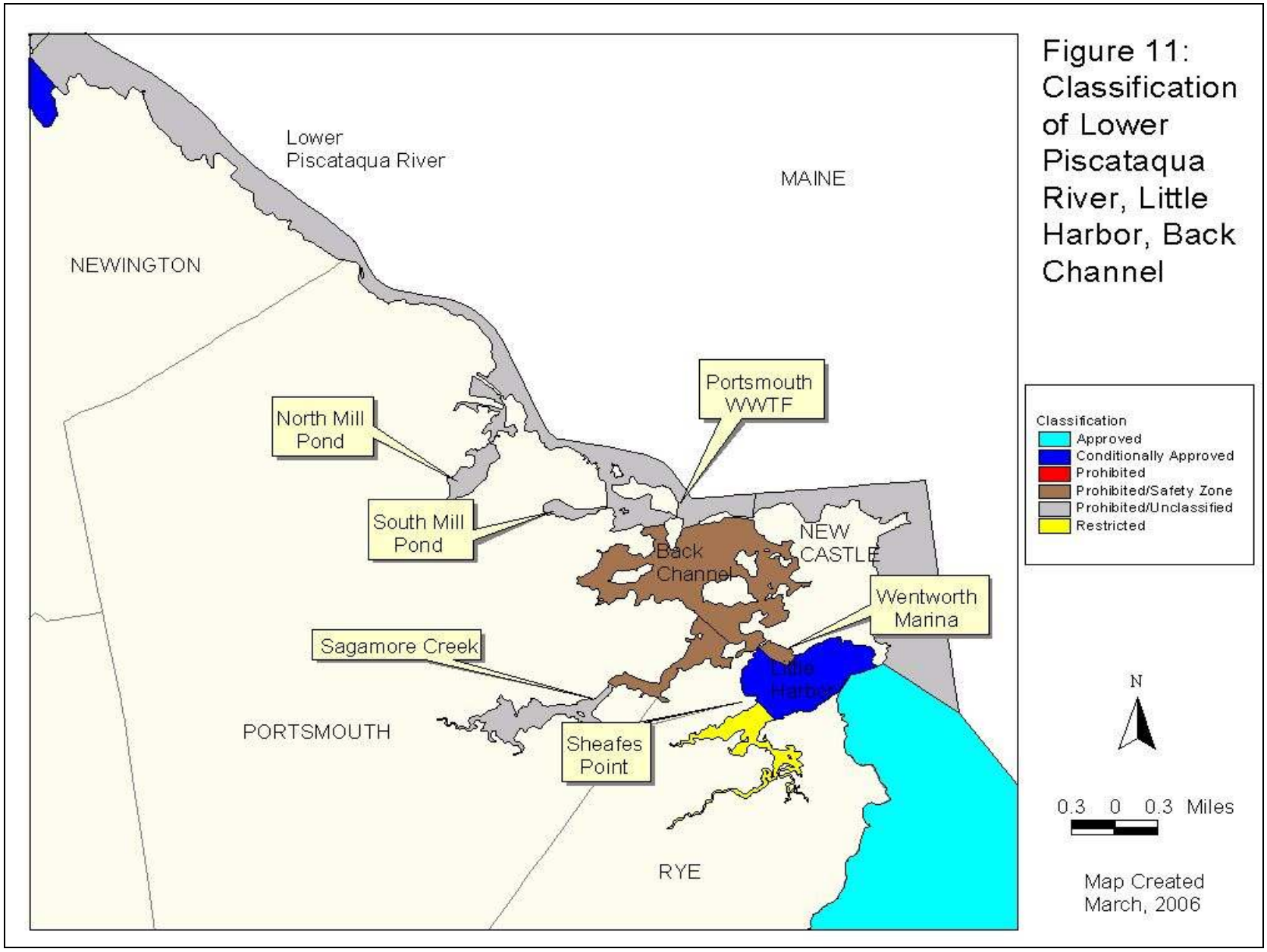


Figure 11: Classification of Lower Piscataqua River, Little Harbor, Back Channel

Zone also meant that sites GBA7 and GB20 were of limited value. As a cost-saving measure, these three sites were discontinued in 2005.

Table 5: NSSP Statistics for Stations in the Piscataqua River
(Refer to Figures 1 and 2 for sampling site locations)

	GB21	GB22	GBA10	GBA11.5	GB18
Count	30	30	30	30	30
Geomean	30.6	15.4	9.9	7.4	6.1
Est. 90th	122.8	82.3	48.9	30.0	26.0
Class.	P	P	P	P	P

P = Prohibited

Bellamy River

The Bellamy River growing area stretches from the head-of-tide in Dover to the mouth of the River at the Route 4/Scammel Bridge (Figure 10). A sanitary survey report was issued for this area in October 2005, classifying the northern portion (161 acres) as Prohibited and the southern portion (276 acres) as Conditionally Approved.

NSSP statistics for Bellamy River sites are presented in Table 6. All sites show relatively low bacteria levels consistent with the area's Conditionally Approved classification, which includes a rainfall closure condition of one inch.

Table 6: NSSP Statistics for Stations in the Bellamy River
(Refer to Figure 2 for sampling site locations)

	GB2	GB33	GB34
Count	30	30	30
Geomean	5.8	7.3	5.6
Est. 90th	28.1	33.4	24.4
Class.	CA	CA	P

P = Prohibited, CA = Conditionally Approved

Little Harbor/Back Channel

The Little Harbor and Back Channel growing areas (Figure 11) include 513 acres of Prohibited/Safety Zone around the Portsmouth wastewater treatment plant outfall and Wentworth Marina, 93 acres of Restricted waters upstream of Sheafes Point, 198 acres of Conditionally Approved waters in Little Harbor, and 96 acres of Prohibited/Unclassified waters in Sagamore Creek upstream of the Route 1A bridge.

NSSP statistics for Little Harbor sites are presented in Table 7. Fecal coliform data in Little Harbor meet Conditionally Approved criteria (0.50-inch rainfall criterion, seasonal closures for boat sewage concerns). Note that several of the sites in Table 7, namely the "LHB" sites, are relatively

new boat stations, having been created in 2001. Seasonal closures for boat sewage are based on weekly surveys of numbers of boats capable of discharging sewage, and the capacity of surrounding waters to dilute potential discharges to safe levels.

Table 7: NSSP Statistics for Stations in Little Harbor
(Refer to Figure 3 for sampling site locations)

	LHB1	LHB2	LHB13	LHB6	T14	T7
Count	27	28	28	27	30	30
Geomean	4.0	3.7	4.9	4.3	13.7	26.1
Est. 90th	13.1	8.5	14.6	15.7	71.7	172.4
Class.	N	N	N	N	R	R

N = New, R = Restricted

NSSP statistics for Back Channel sites are presented in Table 8. Fecal coliform data generally meet Conditionally Approved criteria at some sites, although all of Back Channel is classified as part of a Prohibited/Safety Zone around the Portsmouth wastewater treatment facility outfall. The reader should note that at the start of 2005, LHB9 was deemed to be of limited value and was discontinued; thus, it does not appear in Table 8.

Table 8: NSSP Statistics for Stations in Back Channel
(Refer to Figure 3 for sampling site locations)

	LHB16	LHB5	LHB8
Count	27	26	27
Geomean	4.5	3.8	4.7
Est. 90th	18.3	9.6	13.7
Class.	N	N	N

N = New

Atlantic Coast

The Atlantic Coast growing area extends to the three-mile limit under the state's jurisdiction and includes the New Hampshire waters around the Isles of Shoals (Figure 13). The growing area includes 38,979 acres of Approved waters, with several small closures around actual and potential pollution sources.

NSSP statistics for Atlantic Coast shore sites are presented in Table 9. As discussed in the 2004 DES Shellfish Program annual report, a Prohibited area was established around site AC3 in 2004, with new monitoring site AC3B created at the boundary. The required minimum thirty samples have been collected, and indicate that water quality on the boundary appears to be consistent with Approved criteria. The official Annual Report for this growing area, to be published in spring 2006, will recommend a classification change in this area back to "Approved."

Table 9: NSSP Statistics for Stations on the Atlantic Coast/Shore Sites
(Refer to Figures 4 and 5 for sampling site locations)

	AC1A	AC2	AC3	AC3A	AC4C	AC4D	AC10	AC5A	AC6G	AC7B	AC8
Count	27	30	30	18	18	16	30	30	30	30	30
Geomean	3.7	4.2	6.6	4.9	5.8	5.1	3.2	4.8	3.6	4.1	6.9
Est. 90th	17.1	16.6	58.4	24.1	47.8	37.0	9.6	27.1	10.9	15.9	38.0
Class.	N	A	R	N	N	N	A	A	A	A	A

N = New, A = Approved, R = Restricted

While the classification of Atlantic waters largely relies on the water sampling conducted at the shoreline sites (due to their proximity to potential/actual pollution sources), the DES continues to conduct sampling at boat sites as well. With the exception of ACB20 and ACB22, each of these sites is paired with a corresponding shore site and is located approximately 500 - 1000 feet from shore. Site ACB20 is located well offshore, approximately one nautical mile south of White Island. ACB22 is located at a relatively new aquaculture site in the open ocean, near the Rye/North Hampton border. Statistics for these sites (Table 10) show compliance with Approved criteria.

Table 10: NSSP Statistics for Stations on the Atlantic Coast/Boat Sites
(Refer to Figures 4 and 5 for sampling site locations)

	ACB1A	ACB2	ACB3	ACB4	ACB5	ACB6	ACB7	ACB8	ACB20	ACB22
Count	19	30	30	30	30	30	30	30	30	11
Geomean	3.4	2.5	2.4	2.7	2.2	2.5	2.5	3.0	2.0	2.0
Est. 90th	13.4	6.8	5.6	6.3	3.7	4.4	4.7	6.9	2.0	2.0
Class.	N	A	A	A	A	A	A	A	A	N

N = New, A = Approved

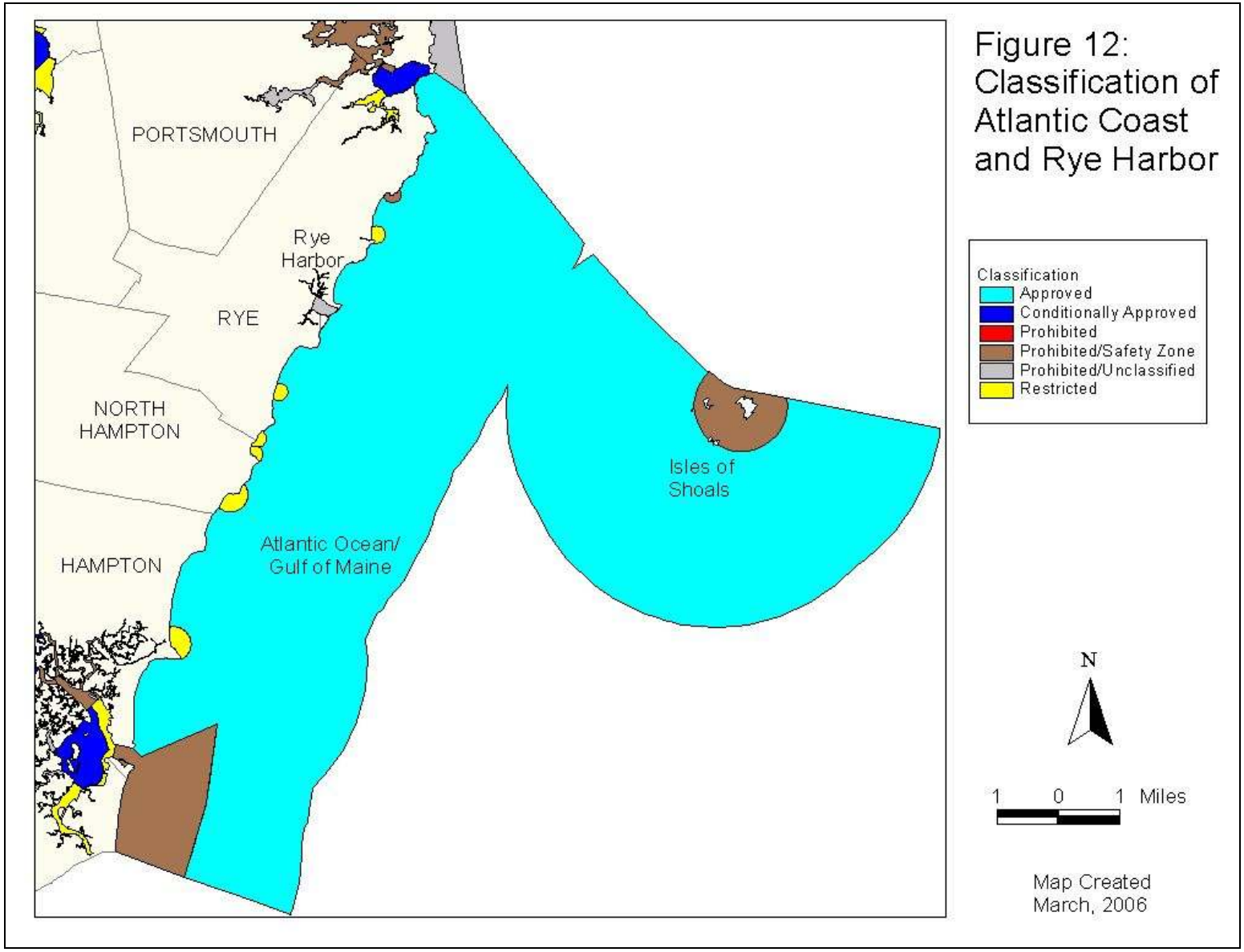
Rye Harbor

The Rye Harbor growing area includes 47 acres of water, all of which are Prohibited/Unclassified (Figure 13). NSSP statistics for Rye Harbor sites are presented in Table 11. Site RH4 was deemed to be of limited value, and was discontinued at the start of the 2005 sampling season. Site RH1, located in a tributary on the south side of the harbor, continues to show high and quite variable fecal coliform levels. Pollution source investigations by the DES Watershed Assistance Section are still ongoing in this area.

Table 11: NSSP Statistics for Stations in Rye Harbor
(Refer to Figure 4 for sampling site locations)

	RH1	RH2	RH3
Count	30	30	30
Geomean	15.5	7.4	4.7
Est. 90th	168.1	40.8	22.8
Class.	R	A	A

R = Restricted, A = Approved


PORTSMOUTH
Rye Harbor
RYE
NORTH HAMPTON
HAMPTON
Atlantic Ocean/ Gulf of Maine
Isles of Shoals
Figure 12: Classification of Atlantic Coast and Rye Harbor
Classification
Approved
Conditionally Approved
Prohibited
Prohibited/Safety Zone
Prohibited/Unclassified
Restricted
N
1 0 1 Miles
Map Created March, 2006

Hampton/Seabrook Harbor

The Hampton/Seabrook Harbor and Tributaries growing area encompasses 1,067 acres, including 474 acres classified as Conditionally Approved, 264 acres classified as Restricted, 208 acres classified as Prohibited/Safety Zone, and 121 acres classified as Prohibited/Unclassified (Figure 13).

NSSP statistics for Hampton/Seabrook Harbor sites and for the Hampton Falls River/Taylor River sites are presented in Table 12 and 13, respectively. The conditions under which harvesting is allowed in this area are quite restrictive, including a shortened season of November-May, and a rainfall closure threshold of 0.25 inches. Under these conditions, all sites meet Conditionally Approved criteria. Work to re-evaluate the current classification of all areas of the harbor is ongoing. A sanitary survey report is scheduled for completion in 2006.

The reader should note that two historical monitoring sites were dropped from the 2005 sampling program. Site HH17 was eliminated because a large-scale dredging operation relocated the channel in which HH17 was located. Because this site was deemed to be of limited value for the program, it was not replaced. Site HH32 had been located in the Hampton Falls River, but was dropped in 2005 when a statistical analysis showed no statistically significant results between HH32 and HH34.

Table 12: NSSP Statistics for Stations in Hampton/Seabrook Harbor
(Refer to Figure 6 for sampling site locations)

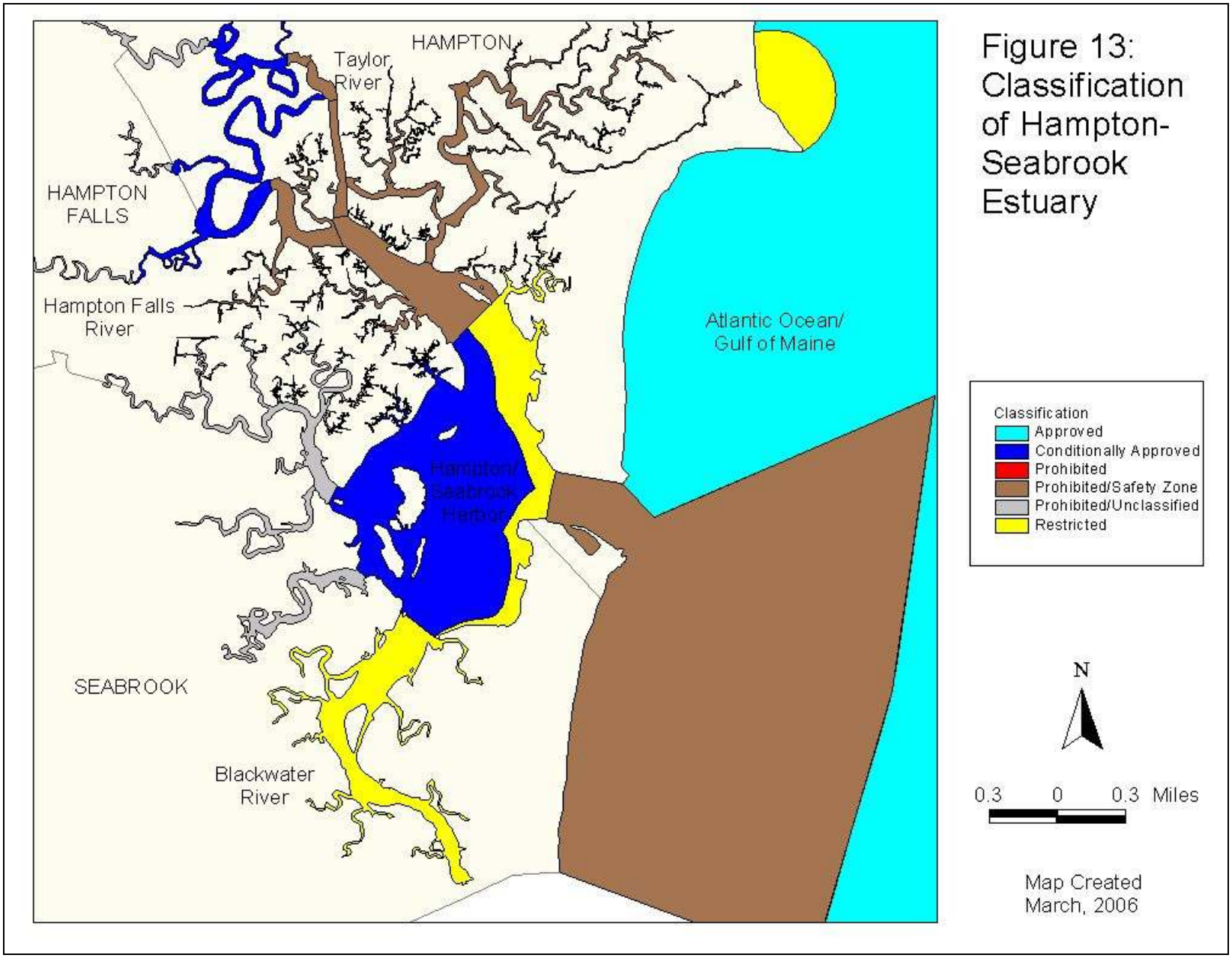
	HH10	HH11	HH12	HH18	HH19	HH1A	HH2B	HH5B	HH5C
Count	30	30	30	30	30	30	30	30	30
Geomean	3.1	3.5	3.7	3.2	3.3	4.3	4.0	3.8	3.2
Est. 90^{th}	9.3	8.8	12.6	8.2	11.4	11.9	14.3	11.2	7.9
Class.	A	A	A	A	A	A	A	A	A

A = Approved

Table 13: NSSP Statistics for Stations in Hampton Falls and Taylor Rivers
(Refer to Figure 6 for sampling site locations)

	HH30	HH31	HH33	HH34	HH35	HH36	HH37
Count	30	29	30	30	22	16	16
Geomean	4.4	4.9	5.7	3.6	5.0	6.8	4.7
Est. 90^{th}	12.8	18.7	21.5	8.6	23.3	21.6	19.7
Class.	A	A	A	A	N	N	N

A = Approved, N = New


HAMPTON
Taylor River
HAMPTON FALLS
Hampton Falls River
Atlantic Ocean/ Gulf of Maine
Hampton/ Seabrook Harbor
SEABROOK
Blackwater River
Figure 13: Classification of Hampton-Seabrook Estuary
Classification
Approved
Conditionally Approved
Prohibited
Prohibited/Safety Zone
Prohibited/Unclassified
Restricted
N
0.3 0 0.3 Miles
Map Created March, 2006